

Space travel

SCRIPT:

Many young people chose to pursue careers in science because of shows like *Star Trek*, a vision of mankind exploring the frontiers of space. But the deeper we look into space, the more distant our dreams become.

For example, if we built the very fastest spaceship we could, and then set out for the very nearest neighboring star, it would still take us thousands of years to get there.

No one would ever make it. But a robot could. Robots could travel in our place.

And just look at the pictures of planets they've already given us. This is a flight over Venus. How does it work? A robotic spacecraft takes measurements of the planet's surface. Then a computer simulates the actual surface of Venus, as if we were there.

We've also been to Mars...flying over canyons and mountains that are bigger than anything on Earth. We've even visited the moons of Uranus. This is Miranda, a strange world of building blocks. Is this a preview of what human space travelers will see someday...like *Star Trek*? Perhaps. But if it turns out that we can't travel very far from earth...we already know that robots can, allowing us to see these distant worlds, through their eyes.

Relevant NSES Standards

NSES Content Standard A: Understanding about scientific inquiry.

(Grades K-12) Ask questions with scientific knowledge. (Prospects for interstellar travel.)

(Grades K-12) Judge the merits of an idea with data. (Prospects for interstellar travel.)

(Grades 5-12) Using tools (robotic spacecraft) to collect data.

NSES Content Standard B: Physical science; properties of objects and materials.

(Grades K-4) Positions of objects (stars) relative to other objects (Earth).

NSES Content Standard C: Life science.

(Grades K-8) Human life span. (Stars are too distant to visit.)

NSES Content Standard D: Earth and space science.

(Grades K-4) Objects in the sky. Stars and planets.

(Grades 9-12) Comprehending large distances and long time scales.

NSES Content Standard E: Science and technology.

(Grades K-8) Propose a solution to a problem. (Using robots for space travel.)

(Grades 5-8) Limits of technology. (Limits of manned space travel.)

(Grades 9-12) Technology can fulfill human aspirations. (Using robots for space travel.)

NSES Content Standard G: History and nature of science.

(Grades K-8) Scientists want to understand the world. (Visit planets and stars.)

(Grades 5-12) Science and technology cannot solve all problems. (Large distances present enormous obstacles to manned space travel.)

Credits: Ray Villard, NASA; Don Savage, NASA

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